



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,536	04/15/2005	Anatoly Anatolievich Kudryavtsev	37074-01	1410

7590 03/27/2007
Nexsen Pruet
PO Box 10107
Greenville, SC 29603

EXAMINER

NGUYEN, VINCENT Q

ART UNIT	PAPER NUMBER
----------	--------------

2858

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/531,536

Applicant(s)

KUDRYAVTSEV ET AL.

Examiner

Vincent Q. Nguyen

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Election filed 3/2/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 1-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-25, 31-35 and 37-41 is/are rejected.
- 7) ☒ Claim(s) 26-36 is/are objected to.
- 8) ☒ Claim(s) 1-41 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/2/07, 7/22/05, 4/15/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group II in the reply filed on 3/02/2007 is acknowledged. The traversal is on the ground(s) that Applicant found closest prior art US patent number 5,767,683 which arose from a domestic and includes claims to both a detector and method of operating said detector. This is not found persuasive because "The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e))." In this case, the method as claimed can be practiced by another and materially different apparatus. For example, the step of an ionization of impurity atoms and molecules in their collisions with particles can be practiced by radiating the UV light into the chamber and detected by a laser. The application inventions are independent or distinct and there would be a serious burden on the examiner if restriction is not required because searching the application of UV light is not necessary to get the search for voltage/current applied to the chamber. The inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

The requirement is still deemed proper and is therefore made FINAL. Claims 1-20 are withdrawn from further consideration.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it exceeds 150 words in length. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 21-24, 31-35, 37-41, are rejected under 35 U.S.C. 102(b) as being anticipated by Sun et al. (6,225,653).

With respect to claims 21-23, 31-35, 37-41, Sun et al. discloses an ionization detector for the analysis of the impurities composition in a main gas, comprising (a) an ionization chamber (36) filled with said main gas and impurities mixture and, at least, two electrodes (48-52) at least one being an anode and one being a cathode (See also the prior art of figure 1 for the anode and cathode) inside of said chamber 36, wherein said main gas pressure and the ionization chamber geometry being chosen in such that a distance from any point inside of said ionization chamber to nearest chamber wall or one of said electrodes is less than a mean displacement of electrons before they lose the chosen portion of their kinetic energy (The position of the electrodes less than a mean displacement is inherent from figure 3, 4, and 5A to collect the electron and ions; Sun et al.'s col. 4 lines 33-50); (b) an equipotential space provided at the region of said ionization chamber where said impurities ionization occurs (Col. 4 lines 33-50); (c) a power source (54) generating particles with definite energy to ionize said impurity atoms or molecules; (d) a measuring circuit (56) to detect electric current as a function of the voltage applied to said electrodes (48-52) wherein said measuring system is capable of determining the amount of electrons with characteristic energies produced during the ionization of said impurities (See electrode 52 through out the disclosure and figures 2-5).

With respect to claim 24, Sun et al. does not explicitly disclose main gas pressure varies from 10 to 10^5 Pa and more. However, that pressure is typical to the main gas.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sun et al. (6,225,633) in view of Tooru et al. (5,320,577).

With respect to claim 25, Sun et al. disclose every subject matter recited in the claim except for measuring system is designed to find second derivative of the current dependence on the voltage applied to determine the amount of electrons with the characteristic energy values.

Tooru et al. discloses an air conditioner control device, which including a gas sensor for detecting atmosphere contamination (Col. 10 lines 40-47) and further discloses a second derivative for the purpose of enhancing the accuracy.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the second derivative as taught by Tooru et al. into the system of Sun because Tooru taught that: "The linear change of the sensor output generates a large noise in the first derivative. However, it does not generate any noise in the second derivative." (Tooru's col. 7 lines 2-5).

Allowable Subject Matter

8. Claims 26-30, 36, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent Q. Nguyen whose telephone number is (571) 272-2234. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VINCENT Q. NGUYEN
PRIMARY EXAMINER

3/22/2007

Vincent Q. Nguyen

